

Summary

This analysis is done for X Education and to find ways to get more industry professionals to join their courses. The basic data provided gave us a lot of information about how the potential customers visit the site, the time they spend there, how they reached the site and the conversion rate. The following are the steps used:

1. Cleaning data: The data was partially clean except for a few null values and the option select had to be replaced with a null value since it did not give us much information. Few of the null values were changed to 'not provided' so as to not lose much data. Although they were later removed while making dummies.
2. EDA: A quick EDA was done to check the condition of our data. It was found that a lot of elements in the categorical variables were irrelevant. The numeric variables seems good and outliers present in the numeric variables were teated.
3. Dummy Variables: The dummy variables were created and later on the dummies with 'not provided' elements were removed. For numeric values we used the MinMaxScaler.
4. Train-Test split: The split was done at 70% and 30% for train and test data respectively.
5. Model Building: Firstly, RFE was done to attain the top 15 relevant variables. Later the rest of the variables were removed manually depending on the VIF values and p-value (The variables with $VIF < 5$ and $p\text{-value} < 0.05$ were kept).
6. Model Evaluation: A confusion matrix was made. Later on the optimum cut off value (using ROC curve) was used to find the accuracy (which came around 80%), sensitivity and specificity on the train data frame.
7. Prediction: Prediction was done on the test data frame with an optimum cut off as 0.39.
8. Precision – Recall: This method was also used to recheck and a cut off of 0.39 was found with Precision around 68% and recall around 79% on the test data frame.

The top factors that positively impact lead conversion are:

- 1.Total Time Spent on Website
- 2.Current Occupation is Working Professional

3. Lead Origin is Add Form

The top factors that negatively impact lead conversion are:

1. Do not Email – Yes

2. Last Notable Activity – Email Opened

3. Last Notable Activity – Page Visited on Website